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ABSTRACT

The admissions process in graduate education is heavily criticized for poor recruitment procedures and the use of criteria unrelated to academic success. This review examines the factors related to student enrollment in graduate programs, the policies and procedures followed by graduate departments, and draws some implications for the improvement of the admissions process. (Author)

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Graduate School Admissions *by James Harvey*

The admissions process in graduate education is heavily criticized in the literature for poor recruitment procedures and the use of criteria unrelated to academic success. This review examines the factors related to student enrollment in graduate programs, the policies and procedures followed by graduate departments, and draws some implications for the improvement of the admissions process.

Delayed decisions

Virtually everyone writing on graduate school admissions agrees that many students have delayed to their disadvantage entry into graduate school. Several studies indicate that often such delays are the result of post baccalaureate decisions to enter graduate school on the part of these students. Gropper and Fitzpatrick (1959) surveyed 1,913 graduate and professional school students and found over one-quarter of their number had waited until after they had their undergraduate degree in hand before considering graduate school; Berelson (1960) questioned 3,800 doctoral recipients and found that only 35 percent had decided on a doctorate degree at the time of their bachelor's; and Davis (1962) sampled 2,800 graduate student at 25 universities and found that over 40 percent had spent at least a year out of college before commencing their graduate study.

In the Davis study and a follow-up, *Great Aspirations* (1964), involving 34,000 undergraduate students at 135 institutions of higher learning, Davis concluded that undergraduate students deferred entry into graduate school largely because of "motivational" reasons such as wishing to do other things or desiring practical experience. "External" reasons such as money, the draft, and a low Academic Performance Index (API) – grades weighted by the quality of the school – were also factors in the delayed decisions. API in particular seemed to influence graduate education plans, though Davis' findings were not uniform throughout all disciplines. Grigg (1965) and Wilson (1965), both studying large samples of students in southern universities, also found large percentages of seniors undecided as to graduate work (over 50 percent in Grigg's survey). Both also concluded that earning a doctorate was not the primary aim of students planning to enter graduate school. It was an "emergent goal" as the students proceeded through graduate school, to use Wilson's term.

Factors behind decisions

Research on the student's decision to enter graduate school reveals common variables: socioeconomic status of the student, academic ability, and sex.

Academic ability is believed to be one of the most important factors leading to graduate enrollment; yet, some writers conclude that too many good students are not enrolling. Davis, in addition to noting that some good students defer entry to graduate programs, inferred in another unpublished study, "The Survivors" (1963), that students below the top rank in prestigious undergraduate programs might feel they lack the ability to undertake graduate work successfully since academic achievement is "defined by students and teachers as relative standing within a particular student body." Sharpe (1970) agreed with this point of view. In 1958 she surveyed 55,000 recipients of bachelor's and first level professional degrees and 10,000 recipients of master's and second level professional degrees, receiving a 65 percent response. In 1963, over 23,000 of the original respondents were surveyed again, with 83 percent returning usable questionnaires. She found that 38 percent of the high-GPA students (3.2 or better) had not sought an advanced degree five years after receiving their first or second level degrees and that "A" students from nonselective institutions were more likely to enroll in graduate school than C-plus students from Ivy League colleges.

This is not to suggest that a high percentage of good students are not admitted to graduate programs, or that prior academic achievement is not an important factor in graduate admissions. Academic performance is one of the strongest factors in terms of aspiration for graduate education and attainment (Wegner 1968, Gropper and Fitzpatrick 1959, Davis 1968, Astin and Panos 1969). However, it is not the only factor, and many academically talented students are not continuing their education while students with less graduate level potential are enrolling in graduate school.

Socio-economic status (SES) is frequently the variable cited to explain the fact that capable students do not enter graduate school. Gropper and Fitzpatrick concluded that SES was an important variable in the student's decision to enter graduate school, with lower SES students less likely to enroll. Grigg, Wegner (1968) and Spaeth (1968) also maintain that a relationship between the student's SES and his enrollment in graduate school exists. Others, however, feel that SES is not a total bar to graduate work and cite their data indicating that sizable proportions of enrolled students come from low-status backgrounds (Berelson; Hunter, 1967; Davis, 1962). In spite of this, Davis (1964) did find a relationship between SES and aspiration for graduate work – high SES men were likely to plan on further education regardless of grades.

Davis (1962) found sex to be as important a variable as API in predicting plans for graduate education. Sharpe (1970)

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and Wegner (1968) found that a smaller proportion of women than men actually enrolled in graduate school, with Wegner also noting that early marriage by women played "a significant role in selecting women out of the educational system despite earlier intentions." Astin and Panos (1969) found that women not only have lower aspirations for graduate study than men as freshmen, but also that their aspirations decrease by the time they are seniors.

It is not infrequent in the literature and interview surveys to find that academic departments frequently discriminate against women on the assumption that they are not serious about graduate study, will marry, or will not make the kind of professional contribution on receiving the degree that a man would (Heiss, 1970). "In some departments," concluded Heiss, "the signals are quite clear: no women need apply." Frequently researchers note that women do not apply in the same percentages to graduate school as do men, but that a greater percentage of them have high grades (Davis, 1962; Wegner, 1968; Heiss, 1970; Sharpe, 1970).

Graduate admissions procedures

Burns (1970) notes that the biggest difficulty in assessing the procedures used in admitting students to graduate school is that "all the departments awarding degrees are involved." In undergraduate admissions the function is centralized. He surveyed the 287 members of the Council of Graduate Schools in 1969 and received 245 usable replies that he analyzed by total group: 54 high-Ph.D. granting institutions, 129 low-Ph.D. granting institutions, and 62 master's-only granting institutions. He found that some overall admissions policy existed at virtually all the institutions. Only 18 schools reported that no minimum requirement, such as a stipulated GPA, existed. Eighty-seven percent of the high Ph.D.-granting institutions had some kind of quota system in at least some departments; however, this percentage decreased in low Ph.D.-granting institutions, and was only 32 percent in master's-only schools.

Responsibilities of graduate deans were limited in the admissions process. Fifty-two percent had veto power in decisions to admit students and 33 percent had veto power in decisions to reject. Departments exercised the major role in admitting students although they were not concerned with such "administrative functions" as preparing announcements, setting deadlines, informing students of decisions, or retaining files. In two-thirds of the institutions, the dean's office performed this kind of function, and in 15 percent the dean also had primary responsibility for counseling students.

Most graduate schools required applicants to have a bachelor's degree or its equivalent from an accredited institution and a stipulated class rank or minimum GPA. Ninety-two percent of the institutions required a completed application together with such commonly required information, in order, as: transcripts, graduate record examination (GRE) aptitude test scores, letters of recommendation from faculty members, and GRE advanced test scores. Personality tests, photos, biographical sketches, and academic rating forms were rarely required.

Burns concluded that the lower the status of the institution the more it tended to require the GRE aptitude test – fifty-five percent of the master's-only schools as contrasted to 47 percent of the low Ph.D.-granting institutions and 31 percent of the high Ph.D.-granting ones. A similar pattern held true for the GRE advanced tests. Burns attributed this trend to the greater independence of the departments in the higher status schools since when departmental requirements as opposed to overall requirements were considered, the pattern was reversed.

In another publication ("Case Studies," 1971) prepared by Burns and others to assist the Graduate Record Examination Board to evaluate its services, the results of six in-depth examinations of university admissions and fellowship selection processes are reported. Policies and procedures at Claremont University, Kent State, Northwestern, UCLA, the University of Texas at Austin, and Yale are discussed as representative of the kinds of institutions offering graduate-level work. At most of the institutions, little concern is shown with the use of data processing in graduate admissions, and little centralized help is available to the departments which most frequently make the decisions. Concern is shown by those departments with increasing numbers of applicants and the responsibility for selecting students as "finer and finer" lines are drawn between applicants.

Lannholm (1968a) reports on the use and weight given to various admissions criteria in departments at 30 universities requiring at least one GRE:

- Forty percent of the schools required minimum GRE scores. Some departments were allowed to increase the minimum; other departments set their own standards.
- Test results were used as a major criterion by only 6.6 percent of the departments. In conjunction with other criteria, 37 percent of the departments would reject an applicant for low scores.
- The undergraduate's record was assigned major importance by most departments, with GRE scores ranking first or second by 53 percent of the departments.
- Forced to decide on applicants with varying credentials, 33 percent would reject candidates with high GRE scores and poor letters of recommendation, 74 percent would sometimes admit students with low GRE scores and good letters, 70 percent would never admit students with high GRE scores and low GPAs, and 57 percent would sometimes admit applicants with low GRE scores and GPAs of 3.0.
- Other criteria considered by some departments: rating forms from teachers, statements of objectives, interviews, and quality of undergraduate institution.

Faia (1969) surveyed 102 graduate departments and found that overall GPA was by far the most commonly used criterion and that weighting with other various criteria was virtually nonexistent.

Reactions to letters of recommendation vary. Departments at three of the schools considered by Lannholm reported that they lacked confidence in recommendations. "Some pointed out that the degree of confidence . . . depends largely upon the recipient's knowledge of the writer." A respondent to D.C. Allen (1968) described recommendations as "nothing but polite noises," although Allen found that most graduate professors did rely on them.

Validity of admissions criteria

Although numerous studies, generally based on small samples, have been conducted on the various criteria used to admit students to graduate study, the relationships between criteria and subsequent performance have been not nearly as well understood on the graduate level as on the undergraduate level. Part of the problem may be the graduate department's apparent lack of keeping even elementary figures on such things as enrollment – Burns found that approximately 30 percent of the departments did not respond to questions on the number of applicants or enrollment (1970a).

More substantive problems also exist. Standards vary and samples are small because of the large number of departments (Lannholm, 1967). Moreover, notes Lannholm, defining success on the graduate level is difficult because of such variables as range of grades and length of time to complete a degree. The differences in the definition of success make any generalization of Lannholm's research impractical.

In a cooperative test among ten graduate schools conducted by Lannholm, Marco and Schrader, at least one department from six different disciplines participated: chemistry, English, history, philosophy, physics, and psychology. Predictors were the undergraduate GPA and GRE aptitude and/or advanced test results for students enrolling for graduate work in 1957-1960. Success was judged on departmental ratings of quality of graduate work and the student's status (e.g. completed comprehensives, earned Ph.D.). For 12 groups of students from whom undergraduate GPA was available, GPA was a "reasonably good" predictor of graduate school achievement for 4 groups and a poor predictor for 5. When a judgmental weight was added to each predictor – that is weight the predictors by common sense for the various disciplines – the performance of each predictor improved. In the 4 groups in which GPA worked reasonably, judgmental weighting worked very well; even in the 5 groups in which the GPA had been a poor predictor, weighting provided a slight improvement.

Advanced test scores available for the 12 groups showed reasonably high coefficients for 4 groups but were very low for 4 others. Judgmental weighting was of little help. It improved the prediction ability in 2 of the 4 groups in which the advanced tests had reasonably high coefficients, but reduced the prediction ability in the 2 others. In the 4 groups where the coefficient was very low, judgmental weighting was not satisfactory. Statistically weighting all predictors did not appreciably improve the predictions over the judgmentally weighted total.

Mehrabian (1969) surveyed previous studies of the prediction of graduate school success in psychology, and concluded that undergraduate grades, scores on GRE advanced tests, tests of mathematical ability and grades in mathematics, and the verbal section of the GRE aptitude test all partially predicted graduate school performance in psychology. He studied 266 applicants in psychology at UCLA and 79 students. Essentially, he validated previous findings although he concluded that letters of recommendation were more valuable than his survey had indicated, and that they could be made even more valuable if they provided specific categories and scales on which teachers could rank applicants.

Implications for recruitment

Results of studies attempting to determine who enters graduate school indicate that many students who could profit from graduate work are not enrolling – at least immediately. Researchers are unanimous in concluding that large numbers of students who eventually enroll in graduate school spend a large period of time out of school after receiving their bachelor's degree. It is possible that proposals to shorten secondary and undergraduate programs would be helpful in solving this problem: today's students have, after all, spent at least 16 years in classrooms by the time they reach their bachelor's degree. It is also possible that the motivational reasons cited by Davis as the most important reasons for deferring anticipated graduate study are becoming more prevalent. A survey of a recent class at Harvard ("The Harvard Class of 1970") indicated that more of the graduating seniors were uncertain of their futures than in the past, and that many of them felt they had spent enough time in the classroom and needed different experiences. A particular decline in interest in the Ph.D. was attributed to unfavorable publicity surrounding the prospects for satisfactory employment for recent Ph.D.s.

Findings indicating that many talented undergraduates do not obtain graduate education; that women, although better students, are not enrolling in proper proportions; and that some students do not enter graduate school for financial reasons have one fairly obvious solution: the recruitment techniques used on the undergraduate level could be utilized on the graduate level to inform students of graduate school opportunities. This is not currently the case. Virtually anyone commenting on recruitment to graduate study remarks about the haphazard nature of the process (Berelson, Allen). Frequently, it amounts to no more than mailing off announcements with the expectation that they will be posted. Visits to colleges, counseling for undergraduates, and better information on the requirements for graduate study are needed. Obviously, if graduate schools are interested in attracting the best students, women should not be discouraged.

It is unlikely that graduate schools in the near future will expand enrollments to enable these previously underrepresented groups to enter. Support has declined and the market for Ph.D.s is not as open as it was just a few years ago. However, these groups could be accommodated by refusing entry to those poorer students who have been and probably still are being admitted. Berelson concluded that "everyone who wants to go to graduate school gets in." Hunter's data indicated that over 40 percent of his graduate students reported undergraduate GPAs of B-minus or less. There is obviously room for capable students not currently enrolling.

Implications for admissions

Although the positive but barely satisfactory correlations found between admissions criteria and subsequent success or failure on the graduate level are encouraging, virtually everyone agrees that better prediction criteria are needed, and that current criteria must be improved.

As far as GPA is concerned, this might prove to be difficult. Berelson and Heiss both remark that broader liberal arts backgrounds are desirable in potential graduate students. Faculty members in the social sciences and humanities in particular like to hold this view, notes Heiss. Since students seem to be leaning toward broad rather than specialized programs on the undergraduate level, the GPA in the student's major may decline in effectiveness. A worse problem in terms of the GPA, however, is the growth of pass/fail grading. Three surveys of the reactions of graduate deans or faculty to pass/fail grading indicate little support for this innovation and a tendency to rely more on objective test results in the absence of more traditional forms of evaluation (Hassler, Rossman, Faia). Since GPA has been considered the strongest predictor of graduate school success, it is difficult to see pass/fail grading improving prediction.

Testing, however, may be improved for prediction purposes. The Graduate Record Examinations Board, an independent agency since 1966, has indicated a willingness to make changes in order to improve selection. Already, the institutional testing function has been separated from the graduate admissions function – previously one test ostensibly

served to enable graduate faculties to select applicants and to enable undergraduate faculties to evaluate their programs.

Moreover, plans for the future call for optional testing models for "either specific aptitudes or general background, whichever was more appropriate for a particular graduate field." (Burns, 1970) Suggestions for tests have included: mathematics for science students; data usage for social science students; logical analysis for such fields as English, philosophy, and history; and spatial visualization for chemistry, physics and engineering. The major advantage to this type of approach, notes Burns, is that unlike the current verbal and quantitative material in which the student is tested regardless of interests, "the appropriate ability or knowledge can be measured in accordance with the plans of the student."

Letters of recommendation could be made more effective through use of Mehrabian's suggestion for scales of abilities. Koen (*Proceedings of the Second Summer Workshop*, 1969) maintains that graduate departments should define those abilities which characterize successful students in various disciplines and request undergraduate faculty members to provide information on each applicant regarding those abilities. Houston and Roscoe (1968) suggest that the judgment analysis technique (JAN), in which each candidate is rated by a judge in relation to certain criteria of success and measured against the other candidates, might serve such a function.

Reilly (1971) found that certain "critical incidents" are important in the eyes of graduate faculty, and it is possible that applicants could be rated by former teachers on these incidents. Surveying 50 faculty members each in English, chemistry, and psychology on *specific incidents* which caused them to raise or lower their estimation of a student, he found that such things as (1) flexibility in research when required, (2) willingness to pursue unassigned readings, (3) ability to offer constructive criticism, and (4) careful documentation were prized. Negative incidents included such things as (1) careless reporting of data, (2) over-reliance on one research tool, and (3) poor writing ability. Questioning undergraduate teachers on such specific observable behaviors rather than asking for a general statement probably would produce more useful information.

Finally, some order and philosophy should be brought to the admitting of students for graduate work. The impression exists that the admissions process on the graduate level is haphazard if not indeed capricious. It is doubtful that many departments are aware of the limitations of grades or objective tests as predictors. Certainly most of the departments have not conducted validity studies of these predictors at their institutions. Each graduate school should centralize enough of the admissions function so that: (1) recruitment might be improved, (2) limitations of the information in candidates' folders realized, and (3) follow-up studies of admitted students made. A better understanding of the relationship between admissions criteria and graduate school success might be the result.

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